TO EXPLORES THE RELATIONSHIP BETWEEN FOREIGN AID AND ECONOMIC GROWTH IN PAKISTAN

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Abstract

The purpose of the study is to examine the relationship between foreign aid and economic growth in Pakistan by employing OLS model. The results produced by our study indicate the insignificance of ODA in promoting economic growth. Though the results are positive in promoting growth, but not significant on one hand it reflects the inappropriateness of the current international assistance programme. Among the three main sources of finance we have found FDI and gross saving to be consistently significant in the cross country regression analysis. Moreover, Pooled OLS estimate indicate the economic growth increase by about 50% as a result on a percentage increase in gross saving. The regression model has produced somewhat robust results affecting the GDP annual growth rate. Regarding inflation the OLS and RE estimates show negatively significant results at 5% confidence interval.

Key Words: GDP,ECONOMIC GROTH, FOREIGN AID, FDI

INTRODUCTION

Since the 1960's Foreign Assistance or Foreign Aid has become a leading factor to bridge the relation between industrial and developing nations. For most of the developing countries in Asia and Africa, Foreign Assistance has been the main source of external finance. Moreira (2005) describes Foreign Aid or Official Development Assistance (ODA) as the transfer of resources from the public sector to developing countries in the shape of loans and grants at concession financial conditions to promote economic growth, development and welfare. According to Xayavong (2002) the need to the transfer of these resources for international

development cooperation became more important at the end of Second World War, and especially in the 1970's and 1980', when a rise has been seen in developing countries attaining independence. This growth and welfare is measured by the impact of ODA on economic growth in the recipient countries. In the history of economics the idea of economic growth is as old as economics itself. Many economists have established positive relationship between foreign aid inflow and economic growth. Harrod Domer model is the example of this fact which states that the increase in saving rate increases economic growth, which promotes the view that economic growth can be increased by transferring funds from developed countries to developing and low income countries (Ghattak, 1995).

According to Cassen (1994) foreign aid is provided to recipients in the form of project aid, commodity aid, technical aid and programme aid.. According to the Washington Consensus (1990) a country can apply for foreign assistance if it meets the economic terms (macroeconomic stability, reduced inflation reduced budget deficit trade liberalization etc), set by the donor countries. According to Lensink and White (2000) a substantial increase of aid flow has been observed from developed countries to developing countries in the past three decades. According to Neanidis and Varvarigos, (2005) for many policy makers the effectiveness of aid in recuperating economic growth is still a question, which has turned the analysts to theoretical and empirical studies to know the best suitable environment in which aid can produce effective results.

According to Bowman and Chand, (2007), most generally it is agreed that growth is related to the degree of openness in trade and this fact has contributed to persuade developing countries by the donors to make policies that better incorporate with global trading structure. But Stiglitz and Charlton, (2005) points that trade openness is important for economic growth but not enough, as the limited knowledge and production capacity of the developing countries prevent them to be fully benefited from trade liberalization. Rodrik, Subramanian and Trebbi,

(2004) are specifically interested in the institution rule and quality to be the only important element for economic growth. It's basically to give the suggestion that quality institutions can better employ the benefits of the prospects of trade openness by assisting structural adjustments. This fundamental importance of the institutions characteristics has changed the view of the donors, and more emphasis has been given on capacity building, governance aid and technical support to mitigate institutional barriers for economic development and growth. Dibeh, (2007) finds foreign aid necessay and crucial in post war reconstruction and has established a linked foreign aid with post war reconstruction since the post second world war reconstruction of Europe.

Hypothesis of the study:

The hypotheses of this research study are:

1) Impact of Foreign aid on economic growth in Pakistan using time series data.
2) Impact of foreign aid on economic growth using cross section analysis. In cross-sectional analysis panel data has been employed for selected South Asian countries and selected 16 low income developing countries.

METHODOLOGY

Variables Of The Study

Variables of the this study are GDP per capita annual growth/ annual growth, Official Development Assistance (ODA) or Foreign Aid, Foreign Direct Investment (FDI), Inflation (consumer price index, % annual), Money and Quasi Money (M2), Gross Saving, General Government Final Consumption Expenditure, Trade, Exports of goods and services and Population growth (annual %).

Econometric models:

1) The first model is a simple OLS model designed for single country analysis; Pakistan. As mentioned above, in this model the dependent variable GDP is once taken as annual growth and then as per capita annual growth.

Model-1:

$$\text{GDP (annual growth)} = \beta_0 + \beta_1 (\text{ODA}) + \beta_2 (\text{ODA}^2) + \beta_3 (\text{FDI}) + \beta_4 (\text{INF}) + \beta_5 (\text{GS}) + \beta_6 (\text{M2}) + \beta_7 (\text{POP}) + \beta_8(\text{GGFCE}) + \beta_9(\text{EGS}) + \beta_9 (\text{TRADE}) + \varepsilon \quad \text{----------(1)}$$

$$\text{GDP (per capita growth)} = \beta_0 + \beta_1 (\text{ODA}) + \beta_2 (\text{ODA}^2) + \beta_3 (\text{FDI}) + \beta_4 (\text{INF}) + \beta_5 (\text{GS}) + \beta_6 (\text{M2}) + \beta_7 (\text{POP}) + \beta_8(\text{GGFCE}) + \beta_9(\text{EGS}) + \beta_9 (\text{TRADE}) + \varepsilon \quad \text{----------(1a)}$$

2) Second model is designed for cross-country regression analysis with observed effects. In this model the cross-sectional unit is denoted by "*i*" and time period by "*t*";

Model-2:

$$y_{it} = \alpha_0 + \delta_0 d19_t + \beta_1 x_{it1} + \beta_2 x_{it2} + \ldots + \beta_k x_{itk} + a_i + u_{it}, \quad t = 1,...,19. \quad (2)$$

In this model "Y" represents GDP (gdp), whereas $d19_t$ represent time dummies.

α_0 = intercept for $t = 1$

a_i = the composite error term.

According to Maddala (p.575), the composite error term "a_I" is treated as a random variable rather than fixed constant by the random effect model. If it is assumed that the unobserved effect is uncorrelated with each explanatory variable then the covariance will become;

$$\text{Cov}(x_{itj}, a_i) = 0,\ t = 1,2,...,\ T,\ j = 1,2,...,k$$

By this way the second equation become a random effect model.

Model-2a (for three South Asian countries):

$$\text{GDP (annual growth)} = \beta_0 + \beta_1 (\text{ODA}) + \beta_2 (\text{ODA}^2) + \beta_3 (\text{FDI}) + \beta_4 (\text{INF}) + \beta_5 (\text{GS}) + \beta_6 (\text{M2}) + \beta_7 (\text{POP}) + \beta_8(\text{GGFCE}) + \beta_9(\text{EGS}) + \beta_9 (\text{TRADE}) + \varepsilon \quad \text{- (2a)}$$

$$\text{GDP (per capita growth)} = \beta_0 + \beta_1 (\text{ODA}) + \beta_2 (\text{ODA}^2) + \beta_3 (\text{FDI}) + \beta_4 (\text{INF}) + \beta_5 (\text{GS}) + \beta_6 (\text{M2}) + \beta_7 (\text{POP}) + \beta_8(\text{GGFCE}) + \beta_9(\text{EGS}) + \beta_9 (\text{TRADE}) + \varepsilon \quad \text{- (2b)}$$

Model-2b-(for 16 low income countries):

$$\text{GDP (annual growth)} = \beta_0 + \beta_1 (\text{ODA}) + \beta_2 (\text{ODA}^2) + \beta_3 (\text{FDI}) + \beta_4 (\text{INF}) + \beta_5 (\text{GS}) + \beta_6 (\text{M2}) + \beta_7 (\text{POP}) + \beta_8(\text{GGFCE}) + \beta_9(\text{EGS}) + \beta_9 (\text{TRADE}) + \varepsilon \quad \text{- (3a)}$$

$$\text{GDP (per capita growth)} = \beta_0 + \beta_1 (\text{ODA}) + \beta_2 (\text{ODA}^2) + \beta_3 (\text{FDI}) + \beta_4 (\text{INF}) + \beta_5 (\text{GS}) + \beta_6 (\text{M2}) + \beta_7 (\text{POP}) + \beta_8(\text{GGFCE}) + \beta_9(\text{EGS}) + \beta_9 (\text{TRADE}) + \varepsilon \quad \text{- (3b)}$$

To better understand the results and their interpretation, all the results will be presented in the table form.

EMPIRICAL RESULTS

Empirical results for Pakistan:

To study the impact of foreign aid on economic growth in Pakistan, the following OLS regression has been constructed for the time period 1973-2005.

The table below is constructed to show the impact of different macroeconomic variables on economic growth in Pakistan. in this model GDP per capita has been taken as dependant variable.

Table 1(a): GDP annual growth as dependant variable

Variable	OLS
Official Development Assistance	-0.1604951 (1.081971)
Official Development Assistance^2	0.0855681 (0.1314113)
Foreign Direct Investment	2.308554 (1.37113)
Gross Saving	0.4018567** (0.1216119)
General Government Final Consumption Expenditure	-0.0230172 (0.2056519)
Money and Qausi Money (M2)	-0.002602 (0.1392277)
Inflation	0.139494 (0.148201)
Population	1.061077 (5.049512)
Export of Goods and Services	-0.2765074 (0.3361198)
Trade	-0.0900896 (0.1843398)
R^2	0.46, (46%)
Adjusted-R^2	0.22, (22%)
F-test	0.0992
Multicollineriety	8.94

Heteroscedasticity	chi2(1) = 0.15 Prob > chi2 = 0.6940
D-test	2.12567

Number of observations = 33
**significant at 1% confidence interval
*significant at 5% confidence interval
Standard error in parenthesis

In the above table, R^2 which is the co-efficient of determination is defined as the proportion of the model that creates variation in dependent variable. i.e. if R^2 is close to 1 means "Perfect correlation", and if R^2 is close to 0 means "no correlation" or that independent variables would not have any explanatory power on the dependent variable. The calculated R^2 is 46%, which means that independent variables have very low correlation on dependent variable.

$\overline{R}^2$ is called adjusted R^2 , which is more sensitive measure that how well the model fits with the present sample data, in simple, it gives more robust results.

F-Test:

F-Test shows the over all significance of the model. Here we assume two hypotheses, H_1 and H_0 , as:

$H_0 : R^2 = 0$

$H_1 : R^2 \neq 0$

If calculated *f* is greater than tabulated *f*, then $H_1 : R^2 \neq 0$ is accepted, α = 5% and

$v\,(n - k) = v(33 - 10) = 23$

$k\,(10 - 1) = 9$

f calculated: 0.0922

f tabulated: 2.3201

So, it shows that *f* tabulated > *f* calculated, and the model is overall not significant, because we accept Ho = 0.

VIF: shows the impact of co-linearity among the X's in regression model on the precision of estimation. Typically a VIF value greater than 10 is of concern, but in this model it is less than 10 which is 8.94.

Autocorrelation or Serial Correlation:

We use Durban Watson (DW) test to find the presence of autocorrelation or serial correlation. According to the above table the calculated DW value is 2.12567, which means there is autocorrelation in the model.

Heteroscedasticity:

A measure in statistics that refers to the variance of the errors over the sample size is called heteroscedasticity. Through Chi-squared test the presence of heteroscedasticity is measured. For this we compare the calculated Chi-squared result (χ_{calc}^{2}), with the tabulated chi-squared result (χ_{tab}^{2}).

The chi-squared calculated in this model is 0.6940, (69%), which is smaller than the tabulated value of Chi-squared. Hence heteroscedasticity exist in the model.

In the above table it is interesting to note that we have found a negative relationship between aid and growth in Pakistan. According to the table one unit increase in ODA will decrease the GDP per capita by 0.15% but it is interesting to note that the impact of square term of ODA shows a positive impact. This regression does not fit the results we expected according to the theory postulated above. According to economic theory foreign aid has positive impact on economic growth. The square term of ODA (oda^2)

which represent the diminishing trend of the impact of aid on economic growth also shows contradictive results. Among all the independent variables gross saving (gs) represent significant result, which is an important macroeconomic variable and source of finance.

Table 1(b) represent the impact of different variable on GDP per capita growth as the independent variable.

Table 1(b) GDP per capita growth as a dependant variable

Official Development Assistance	-0.1576071 1.053357
Official Development Assistance^2	0.0833622 0.1279359
Foreign Direct Investment	2.253176 1.334869
Gross Saving	0.3912724** 0.1183956
General Government Final Consumption Expenditure	-0.0222718 0.2002131
Money and Qausi Money	-0.0031326 0.1355456
Infaltion	0.1358775 0.1442816
Population	0.0187371 4.91597
Exports of Goods and Services	-0.2692678 0.3272306
Trade	-0.0876611 0.1794646
R^2	0.4337
Adjusted R^2	0.1763
F-test	0.1478
Multicollineriety	8.94
Hetero	chi2(1) = 0.13 Prob > chi2 = 0.7211
D-stat	2.121959

Number of observations = 33
**significant at 1% confidence interval
*significant at 5% confidence interval
Standard error in parenthesis

The second model has also produced somewhat similar results as the first one. Although the dependant variable this time is GDP per capita growth.

In this model, according to the table 1(b) R^2 is 0.4337, which means that almost 43% variation in the dependant variable is produced by the independent variable. The F-test is found to be insignificant in this model as well, while just like the first model it has autocorrelation and heteroscedascity.

One point to be noted in both the models is that gross saving is significant at 1% level, which means that gross saving has significant impact on GDP annual growth and GDP per capita growth. It was originally assumed that the impact of ODA will be significant when regressed on GDP per capita, but the results failed to comply with the assumption. The overall model is not satisfactory. The numbers of observations are too low which may the reason for not getting desired results.

Regression Results for selected South Asian region (Panel Data):

In the table below the dependant variable is GDP per capita growth. Most of the researchers have made an attempt to find the impact of foreign aid on economic growth by using real GDP per capita growth as dependent variable. So in table (a) dependent variable GDP has been taken as per capita growth. So using Foreign Direct investment (FDI), Gross Saving (GS), Inflation, General Government Final Consumption Expenditure (GGFCE), Export of Goods and services, Population growth and Trade as explanatory variables the following results have been obtained.

Table (1) for Model 2a - GDP per capita growth as dependant variable.

Coefficient	OLS	Pooled OLS	FE	RE
Official Development Assistance.	-1.697532 (0.8911415)	-2.147166 (1.118484)	-1.11732 (0.85046)	-1.697532 (0.8911415)
Official Development Assistance 2	0.1890734 (0.1057743)	0.2535335 (0.1310193)	0.1493539 (0.1000047)	0.1890734 (0.1057743)
Foreign Direct Investment	0.8905882 (0.9110998)	1.183092 (1.130048)	1.265182 (0.8763589)	0.8905882 (0.9110998)
General Government Final Consumption Expenditure	-0.0146714 (0.1386826)	-0.1061655 (0.3523182)	-0.5659345* (0.2173868)	-0.0146714 (0.1386826)
Money and Quasi Money	-0.0276597 (0.0891145)	-0.2989635* (0.1364974)	-0.1552565 (0.0928172)	-0.0276597 (0.0891145)
Gross Saving	0.3740834** (0.1073405)	0.3964853* (0.1826294)	0.4848845** (0.1143001)	0.3740834** (0.1073405)
Trade	0.1808185 (0.122757)	0.4766808 (0.2563886)	0.5064631* (0.1557209)	0.1808185 (0.122757)
Exports of goods and Services	-0.540041 (0.2995306)	-0.7526157 (0.5578344)	-0.8847735* (0.398445)	-0.540041 (0.2995306)
Inflation	-0.0318662 (0.0882264)	-0.2428211 (0.1354474)	-0.0695557 (0.0843314)	-0.0318662 (0.0882264)
Population	1.30269 (1.777764)	6.730334 (7.598794)	4.838408 (4.768986)	1.30269 (1.777764)

Number of observations = 57 * shows significance at 5% level parenthesis are standard errors
** shows significance at 1% level.

Hausman test

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
oda	-1.11732	-1.697532	.5802129	.
oda2	.1493539	.1890734	-.0397195	.
fdi	1.265182	.8905882	.3745938	.
inf	-.0695557	-.0318662	-.0376895	.
gs	.4848845	.3740834	.1108011	.039275
m2	-.1552565	-.0276597	-.1275968	.0259546
pop	4.838408	1.30269	3.535718	4.425244
ggfce	-.5659345	-.0146714	-.5512631	.1674041
egs	-.8847735	-.540041	-.3447325	.2627543
trade	.5064631	.1808185	.3256446	.0958108

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 9.91
Prob>chi2 = 0.4486
(V_b-V_B is not positive definite)

For the second model; *model 1(a)*, regressing on per capita GDP shows that gross saving and trade have expected effect of increasing growth. *model 1(a)* table have OLS, Pooled OLS and RE estimates indicate that increasing gross saving by one percent yields about 40% increase in economic growth for the Asian economies. The results obtained about gross saving are convincing as it is among the important indicator of capital accumulation necessary to stimulate economic growth. The FE estimate with its standard error only smaller than that of Pooled OLS estimate indicate the economic growth increase by about 50% as a result on a percentage increase in gross saving. Regarding gross saving we have found concrete results as in the column of OLS, FE and RE its significant at 1% level as well. Exports of goods and services however, have a negative impact on economic growth which was expected to be positive. Trade yields about 51% increase in per capita GDP if it (*trade*) is increased by one percent, which is an indication of trade liberalization and openness of the economy. Increasing exports of goods and services by one percent as seen in the FE estimate accounts for about 88% fall in per capita GDP. This is significant at 5% confidence interval.

Table (2) for Model 2a GDP annual growth as dependant variable:

Coefficient	OLS	Pooled OLS	FE	RE
Official Development Assistance	-0.45844 (0.678763)	-0.3815212 (1.005323)	-0.44543 (0.704337)	-0.45844 (0.678763)
Official Development Assistance2	0.066643 (0.080566)	0.0514236 (0.1177636)	0.074217 (0.082822)	0.066643 (0.080566)
Foreign Direct Investment	1.574766* (0.693965)	1.643815 (1.063394)	1.82556* (0.725786)	1.574766* (0.693965)
General Government Final Consumption Expenditure.	-0.11197 (0.105632)	0.2344322 (0.3166728)	-0.20711 (0.180036)	-0.11197 (0.105632)
Money and Quasi Money M2	-0.10854 (0.067877)	-0.1857518 (0.1226875)	-0.11964 (0.07687)	-0.10854 (0.067877)
Gross Saving	0.299088** (0.081759)	0.116004 (0.1641521)	0.2802752** (0.094661)	0.299088** (0.081759)
Trade	0.2042796* (0.093501)	0.3121987 (0.2304488)	0.240785 (0.128965)	0.2042796* (0.093501)
Exports of Goods and Services.	-0.46757 (0.228146)	-0.4515924 (0.5013962)	-0.29938 (0.329985)	-0.46757* (0.228146)
	-0.05646	-0.1811543	-0.07873	-0.05646

Inflation	(0.0672)	(0.1217437)	(0.069842)	(0.0672)
Population	-0.49124 (1.354084)	5.578334 (6.829995)	3.902732 (3.949594)	-0.49124 (1.354084)

Number of observations = 57 * shows significance at 5% level parenthesis are standard errors
** shows significance at 1% level

Hausman test

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
oda	-1.11732	-1.697532	.5802129	.
oda2	.1493539	.1890734	-.0397195	.
fdi	1.265182	.8905882	.3745938	.
inf	-.0695557	-.0318662	-.0376895	.
gs	.4848845	.3740834	.1108011	.039275
m2	-.1552565	-.0276597	-.1275968	.0259546
pop	4.838408	1.30269	3.535718	4.425244
ggfce	-.5659345	-.0146714	-.5512631	.1674041
egs	-.8847735	-.540041	-.3447325	.2627543
trade	.5064631	.1808185	.3256446	.0958108

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 9.91
Prob>chi2 = 0.4486
(V_b-V_B is not positive definite)

The regressions show inconsistent result in the coefficients. *Model 1(b)* regressions on annual GDP growth show that foreign direct investment has significant impact on economic growth in South Asian countries (Bangladesh, India and Pakistan). The OLS result shows that additional increase in foreign direct investment yields about 157% increase in annual GDP. The FE model regression shows a higher increase of about 183% in annual GDP as a result of increasing foreign direct investment by one percent. However, the standard error of FDI in FE is higher compared to that of the OLS. Increasing gross saving and trade by one percent will result in about 30% and 20% increase in economic growth respectively. These figures are both significant at 5% confidence interval, while results of gross saving are significant at 1% confidence interval as well. The results interpreted in this model are encouraging in fact that FDI and gross saving are important sources of finance for developing countries, as mentioned in the literature.

Results for the Panel of 16 selected Low Income Countries.

Table (3) for Model 2b: GDP annual growth as dependant variable.

Coefficient	OLS	Pooled OLS	FE	RE
Official Development Assistance	0.0313631 (0.0645845))	0.1292762 (0.0899918)	0.0824621 (0.0875765)	0.0313631 (0.0645845)
Official Development Assistance2	-0.0001785 (0.0009332)	-0.0006563 (0.0011436)	-.0001627 (.0011251)	-0.0001785 (0.0009332)
Foreign Direct Investment	0.2330809** (0.0751391)	0.2458433** (0.0844494)	0.230312** (0.0819282)	0.2330809** (0.0751391)
General Government Final Consumption Expenditure	-0.1930451** (0.0647721)	-0.1089903 (0.0917099)	-0.1340338 (0.0897615)	-0.1930451** (0.0647721)
Money and Qausi Money (M2)	0.0030511 (0.0322331)	-0.105058* (0.05307)	-0.0801138 (0.0529369)	0.0030511 (0.0322331)
Gross Saving	0.1167129** (0.0351602)	0.016945 (0.045334)	0.0883538* (0.044146)	0.1167129** (0.0351602)
Trade	0.0119425 (0.0372771)	-0.0605599 (0.0491829)	-0.0132842 (0.0496443)	0.0119425 (0.0372771)
Exports of Goods and Services	-0.022323 (0.0712645)	0.1107876 (0.0972238)	0.0335329 (0.0996099)	-0.022323 (0.0712645)
Inflation	-0.0004132* (0.0002105)	-0.0000744 (0.0002119)	-0.0001244 (0.0002137)	-0.0004132* (0.0002105)
Population	-0.3707412 (0.4569581)	-0.8432205 (0.6527223)	-0.6082988 (0.6316576)	-0.3707412 (0.4569581)

Number of observations = 304 * shows significance at 5% level parenthesis are standard errors
** shows significance at 1% level

Results for Hausman Test

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
oda	.0824621	.0211624	.0612997	.0796613
fdi	.230312	.2311422	-.0008301	.0344557
ggfce	-.1340338	-.1921354	.0581016	.0624339
m2	-.0801138	.0029438	-.0830576	.0420365
gs	.0883538	.1171949	-.028841	.0268887
pop	-.6082988	-.3603948	-.2479041	.4402047
trade	-.0132842	.0136275	-.0269118	.0340125
egs	.0335329	-.0253413	.0588742	.071472
inf	-.0001244	-.0004144	.00029	.0000392

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 12.38
Prob>chi2 = 0.1349

In the results obtained for the sixteen countries, OLS, Pooled OLS, FE and RE estimates indicate that annual GDP increase by about23% as a result of increasing foreign direct investment by one percent. In this model it is interesting to note that FDI is found to be significant at 1% confidence interval, which is an indication of strong impact of FDI on GDP annual growth. M2 and inflation are found to reduce annual GDP by about 11% (as seen in Pooled OLS) and 0.04% (as seen in OLS and RE estimates). The estimates of OLS and RE show that increasing gross saving by one percent will yield about 12% increase in annual GDP growth in the sixteen developing economies. In this model gross saving has produced significant results at 1% confidence interval at OLS and RE estimates while significant at 5% confidence interval in FE estimates. General government final consumption expenditure has produced negative result. In OLS and RE estimates it significant at 1% confidence interval and carries the notion that 1 percent increase in general government final consumption expenditure will negatively effect the GDP annual growth by 19%. This regression model has produced somewhat robust results affecting the GDP annual growth rate. Regarding inflation the OLS and RE estimates show negatively significant results at 5% confidence interval. As expected FDI and gross saving are significantly influencing the GDP in a positive manner, while the positive significance of which is important for economic growth. While general

government final consumption expenditure M2 and inflation are found to negatively effect the GDP annual growth.

Table 4 for Model (2b) GDP per capita growth as dependent variable:

Coefficient	OLS	Pooled OLS	FE	RE
Official Development Assistance	0.0318297 (0.0629964)	0.1267717 (0.0878493)	0.0821775 (0.0854351)	0.0318297 (0.0629964)
Official Development Assistance 2	-0.0001844 (0.0009102)	-0.0006471 (0.0011164)	-0.0001787 (0.0010976)	-0.0001844 (0.0009102)
Foreign Direct Investment	0.2271482** (0.0732866)	0.2395739* (0.0824341)	0.2235771** (0.0799212)	0.2271482** (0.0732866)
General Government Final Consumption Expenditure.	-0.1885346** (0.0631627)	-0.1058217 (0.0895092)	-0.1301035 (0.0875533)	-0.1885346** (0.0631627)
Money and Qausi Money	0.0035135 (0.0314407)	-0.102528* (0.051805)	-0.0783103 (0.0516394)	0.0035135 (0.0314407)
Gross Saving	0.1135473** (0.034296)	0.0173964 (0.0442558)	0.086275* (0.0430668)	0.1135473** (0.034296)
Trade	0.0109052 (0.0363584)	-0.0590187 (0.0480121)	-0.0132992 (0.0484301)	0.0109052 (0.0363584)
Exports of Goods and Services	-0.0207367 (0.0695095)	0.1069158 (0.0949055)	0.0321782 (0.0971693)	-0.0207367 (0.0695095)
Inflation	-0.0003967* (0.0002054)	-0.000067 (0.0002069)	-0.000116 (0.0002085)	-0.0003967* (0.0002054)
Population	-1.398402** (0.445712)	-1.882579* (0.6371549)	-1.650356** (0.6161755)	-1.398402** (0.445712)

Number of observations = 304 * shows significance at 5% level parenthesis are standard errors
** shows significance at 1% level

Results for Hausman test

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
oda	.069913	.0212952	.0486177	.0189459
fdi	.2232568	.2251468	-.00189	.0332438
ggfce	-.1286538	-.1875924	.0589386	.0600405
m2	-.0783274	.0034029	-.0817303	.040894
gs	.0859674	.1140447	-.0280773	.0260453
trade	-.0143161	.0126448	-.026961	.0324701
pop	-1.64758	-1.387719	-.2598607	.4275737
egs	.0354018	-.0238531	.0592549	.0666211
inf	-.0001161	-.000398	.0002819	.0000364

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(9) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 40.05
Prob>chi2 = 0.0000

In model-2(b) table (4) general government final consumption expenditure, exports of goods and services, inflation rate and population growth have negative impact on per capita GDP. Increasing each of these variables general government final consumption expenditure, exports of goods and services, inflation rate and population growth by one percent result in about 19% (as seen in OLS and RE estimates), 2% (as seen in RE estimate), 0.04% (as seen in OLS an RE estimates) and 140% (as seen in OLS and RE estimates) increase respectively in per capita GDP. It is interesting to note that the impact of population growth is negatively significant at 1% confidence interval in OLS, FE and RE estimates and at 5% confidence interval in Pooled OLS estimates. Similarly the result of general government final consumption expenditure is also negatively significant at 1% confidence interval in OLS and RE estimates. However, like it was seen in the Asian economies the FDI and gross saving have positive impact on per capita GDP. An additional increase in FDI increases per capita GDP by about 23%. Increasing gross saving by one percent increases per capita GDP by about 11%. Interestingly in this model as well FDI and gross saving are significant at 1% confidence interval in OLS and RE models.

As was stated in methodology the dependant variable is taken once as GDP per capita annual growth and then as GDP annual growth rate, while the independent variable were remained unchanged. This strategy was adopted keeping in view the fact the ODA has shown increasing trend regarding the GDP annual growth, while regarding GDP per capita growth it has shown constant, volatile or decreasing trend(tables 1,2, 3). But the results appeared above are very volatile in terms of impact of ODA on GDP annual growth or GDP per capita growth rate. In both the cases no significant impact of aid on economic growth has been found in this study. While on the other hand very robust results are attained regarding the impact of FDI, gross saving, M2, general government final consumption expenditure, trade, exports of goods and services, inflation and population. In all the models FDI and gross

saving are consistently found to be significant and having a strong positive impact on the economic growth which is consistent with literature.

The main conclusion of this study is that there are problems in the current ODA allocation and effectiveness. This study brought me to the conclusion that the main reason of the ineffectiveness of foreign aid in promoting growth is because of the political, geographical and other interests of donors attached to aid. Foreign Aid has become increasingly political as the War on Terror is the best example of political aid to Pakistan. Maizels and Nissanke, (1984) and McKinlay and Little, (1979), also mentioned this fact for the failure of ODA in promoting growth in developing countries. Our models have consistently produced positively results about the impact of FDI and gross saving on GDP annual growth and GDP per capita growth rate. One of the reason of the positive and strong impact of FDI in promoting economic growth is that it is utilised and audited properly, while the ODA in most circumstances utilised as public expenditure or is used for humanitarian purposes which undermine its effectiveness.

CONCLUSION

The results produced by our study indicate the insignificance of ODA in promoting economic growth. Though the results are positive in promoting growth, but not significant on one hand it reflects the inappropriateness of the current international assistance programme. One of the main reasons for the ineffectiveness of Foreign Aid to promote economic growth is the political and geographical interests of the donor countries attached to aid. This view is consistent with the view of many researchers mentioned in the literature review. Among the three main sources of finance we have found FDI and gross saving to be consistently significant in the cross country regression analysis. This shows that FDI is usually channelled through valid sources with properly audited systems, so it produces positive results, while

ODA may be in the conflict zones or may be provided to countries riddled with civil wars. This also undermines the effectiveness of Foreign Aid. Two third of ODA is provided as a public consumption while one third as an investment, (Boone, 1994). This is an indication that most aid is utilised as consumption rather than an investment. Burnside and Dollar, (2000) mentioned the lack institutional quality in the recipient country, Singh, (1985) pointed to the inefficiency of government bureaucracy and state intervention that can make the impact of aid ineffective. The macro economic framework is another reason which can reduce the effectiveness of aid. The view of inefficient macro economic framework is consistent with the view of Collar and Dollar, (1999). Aid is also found to be more effective in post conflict situations. The impact of Foreign Aid in Pakistan has produces very ambiguous results. It has been mentioned in the literature that Foreign Aid to Pakistan has increased in the Military regimes while decreased in the democratic government regimes. This implies that Foreign Aid to Pakistan is dependant on political interests of the donor countries. Military regimes can better serve the foreign interests in the developing countries. To make Foreign Aid effective in promoting growth in the developing countries it will be better for the donor countries to use provide ODA in the form of investment, rather than consumption.

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